

## **3.0 ALTERNATIVES**

There are no changes in this section of the Final Environmental Impact Statement and Section 4(f) Evaluation (FEIS) from those presented in the *Supplement to the Draft Environmental Impact Statement and Section 4(f) Evaluation (SDEIS)*, except as noted by the use of boldface type. The changes are primarily editorial, except for Section 3.2, 3.3 and 3.6 where text was clarified.

### **3.1 Introduction**

In the approximately 25 years since the original design studies for the FAP Route 340 corridor were completed, a number of changes have occurred that required reevaluation of the previously selected design and alignment. First, development has occurred within the corridor, including housing, a fire station, and some commercial developments. Second, environmental concerns and regulations have been developed that must be addressed in the analysis and design process. In addition, the evaluation process had to determine if a freeway/tollway was still the appropriate solution to the regional and local transportation needs. Therefore, several reasonable alternatives covering the full spectrum of the study area were evaluated to determine the type and location of transportation improvements appropriate for the corridor. The project alternative course of action evaluations include:

- 1) No-Action
- 2) No-Action With Transportation System Management (TSM)
- 3) Mass Transit
- 4) Build Alternative

The process used to select the preferred alternative involves the examination of each alternative's reasonable potential to achieve the project's stated Purpose and Need within the allowable criteria as set forth in the National Environmental Policy Act (NEPA). If an alternative did not meet the Purpose and Need of the project, it did not receive the same level of documentation as reasonable and viable alternatives in the process.

### **3.2 Project Alternatives Evaluated**

#### **3.2.1 No-Action**

With the No-Action Alternative, the existing roadway network remains basically unchanged. Normal maintenance and minor highway improvements would continue, but no major improvements such as changes to the horizontal or vertical alignments would be undertaken.

Highway improvements that could be anticipated by the state, counties, townships, and local municipalities with the No-Action Alternative include pavement rehabilitation, minor grading to clean ditches and reshape the road shoulders, and projects to increase safety such as additional lighting and signing.

Preserving the existing roadway network under the No-Action Alternative has fewer dislocation impacts than constructing a new facility. No residences, businesses or public uses are needed for the No-Action Alternative and access to adjacent properties remains the same, as would travel patterns. In addition, no farmland is required for new right-of-way acquisition.

However, due to the continued growth and increased travel demand, the No-Action Alternative is not a viable alternative to serve the transportation needs of the area. According to Will County's Recommended Long-Range Major Street and Highway Program (1984), improvements to the existing network would not significantly increase the roadway system's capacity to carry existing or future traffic, or enhance Will County's regional accessibility. Moreover, the projected increase in traffic resulting from on-going growth further decreases the efficiency and level of service of the existing roadway network.

From a regional perspective, a transportation facility within the FAP Route 340 corridor is necessary to maintain the system continuity approved in the Year 2010 Transportation System Development (TSD) Plan, prepared by the Chicago Area Transportation Study (CATS) in 1990. The Year 2010 TSD Plan, in addition to several local and regional plans, indicates a need for development of FAP Route 340 to continue to build a transportation system that accommodates economic growth.

The elements of the Purpose and Need (Section 1) that are not met by the No-Action Alternative are listed as follows:

- Does not provide a continuous north-south **corridor** [word deleted].
- Does not support the 2010 Transportation System Development Plan prepared by CATS of which FAP Route 340 is a stated element.
- **Does not provide an additional bypass route through the Chicago area linking Indiana to the Lake/Cook County line or western Wisconsin (via the Northwest Tollway).** [sentence deleted]
- Does not relieve congestion at critical locations on the interstate system.
- Does not meet the capacity needs of the corridor.
- Does not accommodate the shifting locations of employment such as central and eastern DuPage County, northwestern Cook County and southern Lake County.
- Does not enhance the accessibility and mobility of people and goods within the region.
- Does not accommodate the increasing demands of [phrase deleted] freight movements.
- Does not improve local travel. Rather local travel would be expected to degrade with this alternative.
- Does not provide an additional crossing of the Des Plaines River Valley.

- Community linkage is not enhanced.

The only benefit of the No-Action Alternative is that there are no direct environmental impacts. However, the consequences of implementing this alternative would lead to longer work trips (in duration) and more congestion and delay on the interstate system.

As demonstrated above, the No-Action Alternative does not satisfy the project Purpose and Need. For these reasons, the No-Action Alternative is not considered an adequate solution to meet existing and anticipated travel needs. The No-Action Alternative will not be further developed as an alternative, because it does not fulfill the Purpose and Need of the project.

### **3.2.2 No-Action With Transportation System Management (TSM)**

In conjunction with the No-Action Alternative, a Transportation System Management (TSM) plan could be initiated that involves activities which maximize the efficiency of the present system. The TSM plan would shape the character of travel demand to make better use of the capacity of the existing transportation system. Possible options to improve the transportation network include:

- coordinated land use management,
- ridesharing,
- variable work hours,
- high occupancy vehicle (HOV) lanes on existing roadways,
- traffic signal timing optimization, and
- transportation management associations.

Many of these TSM aspects should be incorporated with any of the alternatives to comply with requirements of the Clean Air Act of 1990.

As part of this alternative, mixing of complementary land uses by the local planning organizations would be necessary to control development in accordance with transportation limitations. Carpooling and vanpooling programs could be encouraged wherever possible. However, as a result of current densities, ridesharing would be restricted due to the scattered nature of the trip origins and destinations in the project's influence area. Flexible work schedules can reduce congestion by reducing the number of trips occurring during the peak hour. Adjusting starting times would also enable workers to participate in transit and ridesharing programs more readily. HOV lanes designated for use only by multi-occupant automobiles can also have the effect of encouraging carpooling and transit use, thereby reducing the number of vehicles on heavily congested roadways. Another technique to improve efficiency is developing traffic signal systems that link intersections together as a network. A carefully planned and controlled system could minimize delays at traffic signal locations and optimize progression. As part of this TSM Alternative, transportation management associations would be formed with public officials, employers, developers and

retailers. These groups could foster public awareness and educate people about transportation options.

The elements of the Purpose and Need (Section 1) that are not met by the No-Action with TSM Alternative are listed as follows:

- Does not provide a continuous north-south **corridor** [word deleted].
- Does not support the 2010 Transportation System Development Plan prepared by CATS of which FAP Route 340 is a stated element. [sentence deleted]
- Does not provide an **additional bypass** [phrase deleted] route through the Chicago area linking Indiana to the Lake/Cook County line or western Wisconsin (via the Northwest Tollway).
- Does not meet the capacity needs of the corridor.
- Does not accommodate the shifting locations of employment such as central and eastern DuPage County, northwestern Cook County and southern Lake County.
- Does not accommodate the increasing demands of highway based freight movements. However, elements of TSM are able to make the existing system more efficient. Through freight movements would not be affected.
- Does not provide an additional crossing of the Des Plaines River Valley.
- The No-Action with TSM Alternative is not included in any land use plans in the region.
- Community linkage is not enhanced.

There are benefits to the No-Action with TSM Alternative. The benefits are focused on maximizing the efficiency of the existing system. The benefits of this alternative are likely to accrue to the area independent of this project because IDOT is currently studying the Strategic Regional Arterials (SRA's) in the area. These arterials will likely receive TSM enhancements regardless of the implementation of an FAP Route 340 alternative. The potential SRA's in the project corridor are US Route 6, Bruce Road, and IL Route 7 (159th Street). However, these routes are oriented in the east-west direction and do not meet the Purpose and Need of the project.

Although TSM features do help to reduce congestion on the local transportation network, the No-Action with TSM Alternative does not satisfy the project Purpose and Need as shown above. The transportation demands within the corridor are characterized by a combination of through trips and local short-distance trips with varied origins and destinations over varying times. The effectiveness of the TSM elements is limited by the lack of concentrated trip generators in the FAP Route 340 corridor. Depending on the level of development in the corridor, TSM elements may become more effective over time. For these reasons, the No-Action with TSM Alternative is not considered an adequate solution to meet existing and anticipated travel needs. The No-Action with TSM Alternative will not be further developed as an alternative, because it does not fulfill the Purpose

and Need of the project. However, TSM elements should be incorporated into the preferred alternative.

### 3.2.3 Mass Transit

Under the Mass Transit Alternative, the existing roadway system would be retained and reliance placed on an improved public transportation system to accommodate the additional travel demands. Normal maintenance and minor highway improvements would continue, but no major improvements such as changes to the horizontal or vertical alignments would be undertaken.

The general project area is currently served by mass transit. Metra, the commuter rail operating agency in the Chicago area, has four commuter rail stations in the area located in Lemont, New Lenox, Lockport and Joliet. Service to these stations is flexible as rail cars can be added or removed from commuter trains. Additional demand can and would be expected to be accommodated. Parking is available at each of these stations providing accessibility to most residents in the area. Service is oriented to downtown Chicago with schedules arranged to accommodate commuters. PACE, the suburban bus transit operating agency, also operates in the area with local community oriented bus routes. An express bus operates between Joliet and downtown Chicago.

Alternates that could be considered under the Mass Transit Alternative include:

1. A north-south oriented rail based system. A new transit system could be developed along the FAP Route 340 corridor with potential stations for Lemont, Lockport and New Lenox. The biggest problem with this solution is the lack of connectivity near Interstate Routes 55 and 80. Other substantial transit projects extending existing systems into the area would need to be implemented before this alternate could become viable. The other transit projects could be extensions of existing Chicago Transit Authority (CTA) light rail lines. These projects are not currently in any planning documents. **The corridor is not a practical candidate for this type of improvement at this time due to the low density of housing and the lack of employment centers.**
2. Expansion of the existing bus service. Using the existing roadway network, an enhanced bus system to address the additional transportation needs of the area could be implemented. Any of the rail based solutions would be expected to be served by bus transit. This alternate is limited by the capacity of the existing roadway network. Any improvements to the existing network would benefit this alternate.
3. Elgin Joliet & Eastern (EJ&E) Circumferential Route. This alternate, **approximately 10 miles west of the project corridor**, would consist of adding commuter rail service to an operating freight line. Necessary enhancements would include passenger stations and track upgrades. The Revised 2010 TSD has identified this alternate as a corridor of the future. This route has the potential to accomplish several of the elements of the Purpose and Need of the project. The initiative would provide a way to access the employment centers located in western DuPage, eastern Kane, and southern Lake Counties. Metra is reviewing this project for inclusion into their rail network.

The elements of the Purpose and Need (Section 1) that are not met by the Mass Transit Alternates shown above are listed as follows:

- Does not support the 2010 Transportation System Development Plan prepared by CATS of which FAP Route 340 is a stated element. [sentences deleted]
- Does not relieve congestion at critical locations on the interstate system.
- Does not meet the capacity needs of the corridor.
- Does not accommodate the shifting locations of employment such as central and eastern DuPage County, northwestern Cook County and southern Lake County. Alternate 3 does provide some access to shifting employment centers, but bypasses central and eastern DuPage County as well as northwest Cook County. However, good access is provided to southern Lake County.
- Does not accommodate the increasing demands of highway based freight movements.

The Mass Transit Alternative does not meet key elements of the stated Purpose and Need for the project. However, there are good elements of this alternative that should be considered for the area regardless of the preferred alternative. The current national transportation program, ISTEA, encourages the use of intermodal transportation. This project, to the extent appropriate, should follow this guidance. Alternate 2, enhanced bus service should be considered independently of FAP Route 340. Alternate 3, the EJ&E Circumferential Route should be, and is being, considered for implementation. The Revised 2010 TSD lists both FAP Route 340 and the EJ&E Circumferential Route. One should not exclude the other.

In summary, neither rapid transit, commuter rail, or expansion of the region's bus system, either singularly or in combination, satisfies total trip design of the commercial and residential uses that presently exist or would be served by the **recommended** facility. For these reasons, the Mass Transit Alternative is not considered an adequate solution to the study area's transportation needs. The Mass Transit Alternative will not be further developed as an alternative, because it does not fulfill the Purpose and Need of the project.

### **3.2.4 Build Alternative**

The Build Alternative includes three Build Alternates that have been studied for the **recommended** project: (1) further improvements to the existing highway network, (2) an expressway alternate, and (3) a freeway/tollway alternate. The freeway/tollway alternate will be applicable to the potential of this corridor being designed, constructed and operated as a toll highway. Certain items which are unique to a toll highway (toll collection facilities) would modify the requirements stated in Section 3.2.4.3 (for example, the right-of-way will be wider at the location of a mainline toll collection facility).

#### ***3.2.4.1 Further Improvements to the Existing Highway Network***

This alternate considers further improvements to the existing arterial highways. Exhibit 1-3 indicates that traffic volumes will increase significantly on the local roadway network by the year 2010 whether or not a new roadway facility is built. In order to improve transportation service

within the study area, construction of additional traffic lanes would be required. Dual left and right turn lanes would be added at major intersections to maximize operational efficiencies. Additional right-of-way would be needed along most of the rural highways to build the number of lanes necessary to accommodate projected traffic volumes without a separate new roadway facility. Potentially, hundreds of homes and businesses would be relocated to accomplish these widenings.

The existing roadway network within the project corridor is comprised of two major trunk arterial highways (Interstate Route 55 and Interstate Route 80) running primarily east-west. A system of fragmented rural collector roads also serves the local communities. The nearest major north-south route is Illinois Route 53 which is west of the Des Plaines River over four miles from the project corridor. Access to this facility is limited by the minimal number of bridge crossings over the Des Plaines River. **This route serves Romeoville and Joliet, primarily.** The lack of a major north-south arterial highway results in circuitous and therefore inefficient travel.

Gougar Road is the primary north-south route in the project corridor, which is currently a two-lane rural collector road that **does not cross the Des Plaines River valley [phrase deleted]**. State Street, which eventually turns into **[word deleted] Lemont Road**, is **[word deleted]** a heavily traveled north-south road that crosses the Des Plaines River Valley on a four-lane, mile-long bridge.

Although State Street is in good condition, it narrows to a two-lane road through the Village of Lemont. Because of existing development along State Street, necessary widening would be disruptive to the local community and extremely expensive. Numerous access points along State Street and Gougar Road limit the capacity of these roads and further prohibit them from being developed as a viable alternative route to FAP Route 340. Limitations on improvements to the existing highway network would prevent significant truck usage for freight movement.

**Other routes that could be considered for improvements include Illinois Route 83/171, Illinois Route 7 and 135th Street. The widening of Illinois Route 83 across the Des Plaines River valley may be possible, but would involve impacts to holdings of the Forest Preserve District of Cook County. In addition, a significant expansion of Illinois Route 171 (Archer Avenue) would be necessary to provide access to the FAP Route 340 area. Illinois Route 7 currently serves the historic central business district of Lockport, which precludes any significant capacity improvements. A replacement bridge carrying 135th Street over the Des Plaines River is currently being developed. Although the typical section for the proposed bridge could be widened to four lanes, 135th Street lacks system continuity to the east and will not provide any meaningful change in accessibility to the project area.**

The only project identified that would provide additional increased capacity to the area would be the improvement/expansion of IL Route 83/IL Route 171. However, IL Route 83 in this area becomes oriented to the east. The resulting increase in capacity in the FAP Route 340 area is not expected to be large enough to provide for the anticipated changes in land use identified by CATS in the 2010 Transportation System Development Plan.

Strategic Regional Arterial studies conducted by IDOT in this region indicate that an additional crossing of the Des Plaines River valley is viable in the east-west direction as well. Studies not yet completed are leading to the conclusion that the crossing could be a Caton Farm Road connecting to Bruce Road.

The elements of the Purpose and Need (Section 1) that are not met by the Further Improvements to the Existing Highway Network Alternate are listed as follows:

- Does not provide a continuous north-south route.
- Does not support the 2010 Transportation System Development Plan prepared by CATS of which FAP Route 340 is a stated element. [sentences deleted]
- Does not relieve congestion at critical locations on the interstate system.
- Does not accommodate the shifting locations of employment.
- Does not accommodate the increasing demands of highway based freight movements.
- Does not provide an additional crossing of the Des Plaines River Valley.
- This Alternate is not included in any land use plans in the region.

Since this alternative would require an unreasonable number of lanes at intersections which would result in severe displacement impacts and still not satisfy the stated Purpose and Need of the project as listed above, then improving the existing highway network is not considered an adequate solution for this project. The Further Improvements to the Existing Highway Network Alternate will not be further developed as a build alternative, because it does not fulfill the Purpose and Need of the project.

#### ***3.2.4.2 Expressway Alternate***

An expressway is a divided major arterial highway with limited access control and at-grade intersections as well as access to adjoining properties. A freeway/tollway differs from an expressway in that it has full access control with no crossings at-grade.

The Expressway Alternate meets the majority of the project Purpose and Need. It provides linkage between Interstate Routes 55 and 80, accommodates freight movements, provides an additional crossing of the Des Plaines River Valley, **could improve job versus housing balance**, and enhances community linkage. However, three additional questions need to be addressed before selection as a viable alternate: system continuity, route capacity, and funding. First, the question of system continuity.

The North-South Tollway (Interstate Route 355) was constructed as a freeway/tollway. FAP Route 340 extends the North-South Tollway from Interstate Route 55 south to Interstate Route 80. If FAP Route 340 was constructed as an expressway with at-grade intersections, the system continuity is eliminated or at least impaired. An expressway with at-grade intersections introduces a link into the regional freeway/tollway system that is inconsistent in design with the rest of the system. Vehicle safety would be a major concern for a transportation system that has inconsistent facilities along its route. Unfamiliar drivers may not be prepared to stop at the expressway intersections.



The second question, route capacity, deals with the ability of the expressway alternate to accommodate projected traffic. Exhibit 1-3 shows the projected Average Daily Traffic (ADT) ranges between 31,000 and 36,000 vehicles per day. This level of traffic would not be able to be accommodated by at-grade intersections with an acceptable level of service. In addition, the warrants for interchanges on an expressway require the construction of interchanges at all marked routes and at intersections where a traffic signal is warranted within nine years of initial construction. Along with the projected traffic volumes, this requirement virtually necessitates the use of interchanges along FAP Route 340 if it were built as an expressway, ultimately resulting in a freeway/tollway facility. Given the requirements of accommodating route capacity, an expressway facility can not be built.

The third question addresses the source of funding to be used. As originally envisioned, the FAP Route 340 project was expected to be constructed using funds from the Highway Trust Fund administered by the Federal Highway Administration (FHWA). However, these resources are currently not available for this project. The Illinois State Toll Highway Authority (ISTHA) has been authorized by the Illinois State Legislature to investigate construction of the facility. ISTHA operates a user fee system that is based on a pay-as-you-go principle. The realities of this system are that at-grade intersections are not easily accommodated. Separating the paid and the unpaid patrons would be infeasible due to the high costs involved for toll collection at at-grade intersections, and would potentially compromise the capacity and the safety of the system. The expressway alternate can not be accommodated using the ISTHA funding and operating system.

With the Build scenario, the Expressway Alternate satisfies the project Purpose and Need, but the new facility would not provide system continuity, not accommodate the traffic capacity necessary, and not fit the system requirements of the ISTHA. For these reasons, the Expressway Alternate is not considered an adequate solution. The Expressway Alternate will not be further developed as a build alternative, because it is not an adequate solution.

#### ***3.2.4.3 Freeway/Tollway Alternate***

The construction of the North-South Tollway (Interstate Route 355) from Army Trail Road south to Interstate Route 55 makes the freeway/tollway extension from Interstate Route 55 to Interstate Route 80 important to develop and maintain system continuity.

The construction of FAP Route 340 as a freeway/tollway would complete a portion of a continuous belt highway in the Chicago metropolitan area by providing an important link of a design similar to that of the North-South Tollway. Such a link serves as a route for intercity trips as well as an intra-regional, north-south route for trucks and commuters. Eastern cities are accessed via Interstate Route 80, and cities to the northwest of the Chicago area via the Northwest Tollway, Interstate Route 90.

The Freeway/Tollway Alternate meets the Purpose and Need of the project as stated in Section 1 and is further developed as an alternate in this section of this document.

The Freeway/Tollway Alternate consists of a 12.5-mile multi-lane divided highway extending from Interstate Route 55 to Interstate Route 80. Four (4) lanes with a 28-foot median are **recommended** with additional width initially constructed over the Des Plaines River Valley to minimize future

construction impacts to the environmentally sensitive land in the valley. The ramps and overpasses will be built to accommodate the future addition of an outside lane in the event additional capacity is required. The Revised 2010 TSD Plan prepared by CATS identified various potential corridors in the region for a light rail system. However, the corridors considered were not located in the FAP Route 340 project area. Since regulations governing the Illinois State Toll Highway Authority (ISTHA) restrict accommodations for competing modes of transportation in their right-of-way, transit options are confined within the FAP Route 340 corridor. A wider median is not being considered due to the lack of light rail potential. Environmental considerations were also a part of the decision for the median size which reduces potential impacts to the north bluff area. Other options such as shoulder conversions or lane dedications may be considered in the future when programs have been established for reducing vehicle miles traveled.

A typical right-of-way width of 300 feet was used for the evaluation of the alternates. While certain impact evaluations are approximated, they do, however, provide a common base condition upon which valid comparisons can be made. These beginning assumptions were necessary to effectively evaluate the various alternates at the same level of detail. The integrity of the local road system is preserved by grade separating local roads. No direct access to adjacent properties is provided by FAP Route 340. Several alignment and interchange options were identified and evaluated.

As a newly constructed, limited access facility, the Freeway/Tollway Alternate will be a continuous north-south route in the FAP Route 340 corridor which satisfies the project purpose. The freeway/tollway option also fulfills the project need discussed in Section 1.2 by filling a void in the regional transportation network while maintaining the continuity of the North-South Tollway (Interstate Route 355). Additionally, the Freeway/Tollway Alternate addresses Will County's concerns regarding projected traffic capacity requirements in the year 2010 by providing safe and efficient transportation operations.

Guidelines for the selection of interchange spacing for a suburban freeway/tollway facility indicate a minimum separation of 2 miles and an average spacing of not less than 4 miles to be desirable; this spacing is recommended to provide safe and efficient traffic operations. Roads selected for interchanges should be classified as arterials or at least as collectors. This means the roads have the continuity to serve longer trips associated with an arterial and have a paved surface. Arterial and collector roads that are spaced too closely to another interchange for consideration as an interchange will be grade separated from the freeway/tollway facility. Exceptions to these guidelines are considered, based upon need, as well as natural and cultural features. Jurisdictional responsibility for roads in the FAP Route 340 corridor area and interchange locations are shown on Exhibit 3-1.

During the course of constructing an interchange with FAP Route 340 or a grade separation from FAP Route 340, the crossroad may be reconstructed to provide for the grade separation, the left turn lanes for interchanges, and the access control with necessary access revisions. The crossroads will be widened to four through lanes within the interchange locations as part of this project.

Interchange type selection and specific design parameters are based upon providing a safe facility that will provide the appropriate level of service at the appropriate speed efficiently. Also where it is reasonable, an attempt should be made to achieve a uniformity of types to minimize confusion for the driver. Factors influencing the selection and design process include: traffic volumes and mix,

weaving patterns due to nearby ramps, design speed of the crossroad, truck climbing speeds, skew angle of the interchange, and physical constraints.

### **3.3 Build Alternative - Freeway/Tollway Alternate Alignments**

The 12.5 mile long freeway/tollway corridor is comprised of various land uses including residential, commercial/industrial, agricultural, parks/forest preserves, and open lands. When alternate alignments were developed, several environmental issues were considered that influenced the route locations. Among the environmental constraints analyzed were the potential for involvement with Section 4(f) land and Section 6(f) property, avoiding and minimizing the filling of wetlands and floodplains, and avoidance of impacts to Section 106 properties eligible for inclusion in the National Register of Historic Places. Other factors studied which affected the alignments encompassed housing and business displacements, severance of prime farmlands, and community interests.

The alignment development process was based on the philosophy of avoidance first, minimization second, and mitigation of impacts last. Section 3.4 discusses alternate alignments developed to specifically avoid the use of Section 4(f) property. Since total avoidance of all Section 4(f) property is not feasible near 135th Street or through the Des Plaines River Valley area as shown in Exhibits 3-7 and 3-8, the priority switched to minimizing the effects to the sensitive forest preserve areas such as Black Partridge Nature Preserve and Keepataw Forest Preserve. This development process also involves a mitigation plan that helps compensate for the negative impacts associated with the new freeway/tollway facility.

Roadway design criteria is primarily discussed in the FAP Route 340 *Combined Location/Design Report*. However, certain design features that relate to environmental issues such as bicycle trails are described in detail in this report. If FAP Route 340 is built as a tollway, the Illinois State Toll Highway Authority (ISTHA) will incorporate their own criteria in the roadway design. Elements would be added to include features such as toll collection facilities.

A Freeway/Tollway Alternate on the centerline recorded in Will and DuPage Counties in 1968 was the initial alternate; options to it were developed based on an assessment of environmental impacts, engineering criteria, area characteristics, and the roadway network. For discussion, the alignment analysis is divided into three geographic sections--Southern, Middle and Northern--indicated in Exhibit 3-2. The Southern (S) Section stretches from Interstate Route 80 to Illinois Route 7 (159th Street); two optional alignments were identified for this section with some variations. The Middle (M) Section extends from Illinois Route 7 to 127th Street and the Northern (N) Section extends from 127th Street to Interstate Route 55. At least one optional alignment and various shifts were identified for each of these two sections to avoid environmentally sensitive features.

#### **3.3.1 Southern Section - Interstate Route 80 to Illinois Route 7 (159th Street)**

In the southern section, certain features were identified as constraints while establishing the freeway/tollway alignment (see Exhibit 3-3). First, nearby interchanges along Interstate Route 80 at U.S. Route 30 and U.S. Route 45 were noted. Next, existing and proposed residential subdivisions were highlighted as areas to be avoided, if possible, such as development near Interstate Route 80 and Cedar Road, Springview Subdivision on U.S. Route 6, Kylemore Subdivision on Bruce Road,

and Broken Arrow Subdivision between Bruce Road and 167th Street. Additionally, a wetland at 167th Street was identified as a valuable wetland to be avoided in the preliminary Biological Survey conducted by the Illinois Natural History Survey in September 1987. The wetland has open water and is suitable habitat for several state listed threatened and endangered plants and animals. Both existing and proposed land use plans were also examined to ensure proper coordination with local planning efforts, especially agricultural land usage.

### Alternate S-1

The Freeway/Tollway Alternate utilizing the recorded centerline (1968), begins at Interstate Route 80 in the north central section of New Lenox; it is designated as Alternate S-1 on Exhibit 3-3. A directional, three-level interchange is **recommended** at Interstate Route 80 and FAP Route 340. If a facility is constructed continuing south of FAP Route 340, this alignment location and the directional interchange with Interstate Route 80 would displace approximately 23 houses immediately south of Interstate Route 80, increase the project cost and expand the environmental impacts. The alignment proceeds northward with a diamond interchange **recommended** at U.S. Route 6. The entrance to Springview Subdivision on U.S. Route 6 lies within the area of the **recommended** interchange at that location and would necessitate a relocation. Preliminary analysis indicated the recorded alignment requires the displacement of approximately 15 houses, new access for 13 houses, and is in the immediate vicinity of about 30 additional homes in the Springview Subdivision.

Alternate S-1 then progresses northwest crossing Bruce Road, 167th Street, and 163rd Street all grade separated over FAP Route 340. South of Bruce Road, this alignment passes through the Joliet Well Field which is currently in operation. The City of Joliet has indicated its long term goal is to **[phrase deleted] supplement these wells with additional deep wells or other water resources.** The Joliet Well Field would then be used as a support system. The Broken Arrow Subdivision would be directly impacted near the intersection of 167th Street and Gougar Road. The development includes multi-family dwellings and a commercial site that would be displaced by the Alternate S-1 alignment.

A natural feature impacted by Alternate S-1 is the wetland at 167th Street. This high quality wetland would be split by the alignment, severely damaging its significant habitat features. Since this wetland was classified as a jurisdictional wetland, avoidance was investigated.

The Freeway/Tollway Alternate continues to Illinois Route 7 (159th Street) where a diamond interchange is planned. The Illinois Department of Transportation owns some of the parcels that are necessary for the interchange at Illinois Route 7; however, the reserved properties should not influence the alternate alignment selection process. The recorded centerline involves a grade separation over Gougar Road between Bruce Road and 167th Street, and Clinton Street would be relocated through the Springview Subdivision.

Alternates to S-1, the recorded centerline, were developed to avoid the potential impacts mentioned above. Alternates were developed to the east of the recorded centerline because of the path of Interstate Route 80 and development in the area. Interstate Route 80 curves south at a point just west of the interchange with the alignment on the recorded centerline and any alignment shifts to the west cause this interchange to be located less than one mile from the interchange at U.S. Route

30. The close interchange spacing would result in complicated and undesired weaving movements between the two roadway facilities. Any westerly shift results in more residential displacement in the densely populated subdivision near Interstate Route 80 and further increase the impacts associated with the potential development of the future South Suburban Expressway.

Two alternate alignments were identified initially - designated as Alternates S-2 and S-3, with a third variation called S-2A created as a result of public input received after the second Public Meeting was held.

### Alternate S-2

Alternate S-2 (see Exhibit 3-3) begins approximately 1,400 feet east of the recorded centerline (Alternate S-1) at Interstate Route 80 and converges with Alternate S-1 just south of Illinois Route 7. As the alignment is shifted east, the weaving length between the **recommended** interchanges with Interstate Route 80 and U.S. Route 6 is reduced which shortens the decision time drivers have to change lanes when entering or exiting the freeway/tollway. A diamond interchange at U.S. Route 6 is **recommended** since it still provides adequate weaving distance. To minimize housing displacements and reduce visual impacts associated with the freeway/tollway facility, a trumpet interchange at Interstate Route 80 would be provided. This interchange configuration limits the amount of right-of-way needed from the existing subdivisions along Interstate Route 80.

Alternate S-2 avoids the wetland at 167th Street and misses the Joliet Well Field south of Bruce Road. Although Alternate S-2 avoids the entrance to Springview Subdivision, it does require the displacement of about 20 homes, mainly south of Interstate Route 80. With the trumpet interchange at Interstate Route 80, Alternate S-2 also would not accommodate a future extension of FAP Route 340 to the south because of the existing residential development in the area. Clinton Street would not be impacted with the Alternate S-2 alignment. The Broken Arrow Subdivision would not be directly impacted since this alignment is east of the 167th Street and Gougar Road intersection.

### Alternate S-3

Alternate S-3 (refer to Exhibit 3-3), east of Cedar Road, begins about one mile east of Alternate S-1 at Interstate Route 80; it proceeds northwest and meets Alternate S-2 at Bruce Road. Alternate S-3 was developed to reduce residential displacement and to provide greater flexibility in interchange design at Interstate Route 80. A directional interchange is **recommended** in an undeveloped area at Interstate Route 80 which allows high volume, high speed, Interstate to Interstate movements. This location avoids disrupting established residential developments along Interstate Route 80 near Cedar Road and Francis Road. This alignment also requires a partial cloverleaf interchange at U.S. Route 6 to provide the proper weaving length between ramps. An additional grade separation with FAP Route 340 over Cedar Road is necessary, but there would not be any construction required at Clinton Street. The intersection improvements at U.S. Route 6 and Cedar Road would also displace one business, a motel on the southeast corner of the intersection.

Since Alternate S-3 is the same as Alternate S-2 north of Bruce Road, neither the wetland at 167th Street, the Broken Arrow Subdivision, nor the Joliet Well Field are disturbed. While Alternate S-3 would not affect the Springview Subdivision, it would affect the Kylemore Subdivision by clipping the development's southwest corner. Analysis indicated a total of approximately 19 houses are displaced by this alignment. Alternate S-3 also crosses Cedar Road close to U.S. Route 6. The grade separation would restrict development in this area which New Lenox plans for commercial development.

### Alternate S-2A

Based upon input from the public meetings in July 1988 and further evaluation, a new alternate, Alternate S-2A, was developed to further reduce impacts by combining portions of Alternates S-2 and S-3 (see Exhibit 3-3). Because the interchange at Interstate Route 80 is east of Cedar Road, it is in a large open area which reduces impacts to residents and does not preclude an extension of the freeway/tollway to the south. By crossing Spring Creek west of a major confluence area and west of the Kylemore Subdivision on Bruce Road, it minimizes drainage impacts and housing displacement.

With Alternate S-2A, analysis indicates 15 houses are displaced, with modified access for five other houses. This alternate provides a partial cloverleaf interchange at U.S. Route 6 that only has ramps on the north side of the crossroad. This configuration allows for the necessary weaving length between the Interstate Route 80 and U.S. Route 6 interchanges. Grade separations with Cedar Road, Bruce Road, 167th Street and 163rd Street all going over FAP Route 340 and a diamond interchange at Illinois Route 7 would also be constructed. Gougar Road would be grade separated over FAP Route 340 between 167th Street and 163rd Street as well for this alignment. No work would be necessary at Clinton Street since this alignment is further east. Alternate S-2A misses the sensitive wetland at 167th Street, the Broken Arrow Subdivision, and the Joliet Well Field near Bruce Road.

### Alternate Interchange Locations Within the Southern Section

Besides alternate alignments, alternate interchange locations were studied at Bruce Road and U.S. Route 6 based on the request from the City of Lockport to add an interchange at Bruce Road. Lockport's request is partially based on a Feasibility Study for the High Level Bridge over the Des Plaines River prepared by Consoer, Townsend & Associates in February of 1988 for Lockport Township, and their desire for direct access to FAP Route 340 from south of the City. The Feasibility Study was partially dependent upon two projects which have not been programmed - improvements to Bruce Road and construction of the High Level Bridge. Providing an interchange at U.S. Route 6 instead of Bruce Road provides for better local access because U.S. Route 6 is an improved arterial route maintained by the State, connecting the City of Joliet with the southern Chicago suburbs. However, Bruce Road is a local road maintained by Homer Township that departs from an east-west through route near Parker Road. U.S. Route 6 also carries higher traffic volumes, provides convenient access to FAP Route 340 for Joliet and New Lenox, and allows for an interchange at the State marked route. The primary access to FAP Route 340 from Lockport would be via Illinois Route 7 (159th Street). Due to the close proximity of Bruce Road to U.S. Route 6 (approximately one and one-half miles), and to preserve the continuity of the freeway/tollway, an interchange is recommended for U.S. Route 6 and only a grade separation with Bruce Road.

Bruce Road has been designated as a Strategic Regional Arterial from Lockport to Farrell Road. As development occurs in the southern area, Bruce Road may be improved with an interchange warranted at FAP Route 340. The design for FAP Route 340 would not preclude an interchange at Bruce Road at a later time.

### Summary Comparison of Alternate Alignments in the Southern Section

The various alternates for the southern portion of FAP Route 340 were evaluated and compared to eliminate alignments which had greater potential for adverse impacts and to provide focus for local planning and coordination efforts. A summary of the impacts associated with the various alignment segments is provided in Table 3-1. After evaluating all the alternate alignments in the Southern Section, Alternate S-2A has several advantages. This shifted alignment created with public input maintains the same number of displaced houses for a total of 15 residential relocations compared to Alternate S-1, while providing access to meet existing and proposed traffic requirements including a possible link to a proposed South Suburban Expressway. IDOT's freeway/tollway design was used to compare the alternate alignments. **Once the preferred alignment was selected, the ISTHA design was overlaid on IDOT's design and any changes in impacts were then assessed.** ISTHA's actual tollway design will displace three additional houses with Alternate S-2A for a total of 18 houses. Environmental impacts to wetlands are minimized with Alternate S-2A by avoiding the wetland at 167th Street, whereas Alternate S-1 would require filling this wetland. Alternate S-2A displaces about 3.0 acres of wetlands instead of 4.6 acres needed for the recorded alignment. **Table 3-1 includes any adjustments to wetland displacements that the ISTHA design will impact.**

Alternate S-2A avoids the residential development near Interstate Route 80 and Cedar Road as well as the Springview, Kylemore, and Broken Arrow Subdivisions. The other alternate alignments each displace houses in at least one of those subdivisions. Local development and land use

planning has occurred with the anticipation of FAP Route 340 being constructed on the Alternate S-2A alignment. Although Alternate S-2A is slightly longer than the other alignments, right-of-way and construction costs would be similar since less work would be involved with the crossroads such as not realigning Clinton Street. Agricultural farmland impacts would also be similar for all of the alignments because existing land use is approximately the same in the Southern Section, (about 390 acres displaced).

The final selection of an alternate alignment [word deleted] was not [word deleted] made until all of the alternates' impacts and comments on [word deleted] the *Supplement to the Draft Environmental Impact Statement and Section 4(f) Evaluation* (and from the Public Hearings) [word deleted] had been fully evaluated. [word deleted] Based on the evaluation of the impacts from the various alternates, [phrase deleted] the preferred alignment in the Southern Section is Alternate S-2A.

### 3.3.2 Middle Section - Illinois Route 7 (159th Street) to 127th Street

Jurisdictional wetlands as identified by the Illinois Natural History Survey (in accordance to the U.S. Army of Corps of Engineers 1987 manual for identifying and delineating jurisdictional wetlands) are the primary constraints in consideration of the middle section. Other constraints in the alignment development process include residential areas, the Northwest Homer Fire Protection District Station No. 1, various stream and associated floodplain crossings, and finally an historically significant structure on 135th Street.

As shown on Exhibit 3-4, numerous jurisdictional wetlands are located between Illinois Route 7 and 127th Street that must be avoided unless there are no practicable alternatives to construction in the wetlands as per Executive Order 11990. Of special note is the high quality wetland near the Lockport Heights Subdivision. Residential development in the middle section is concentrated in the vicinity of 143rd Street and Illinois Route 171. The area is characterized by the Lockport Heights and Cache Lake Subdivisions as well as the quickly developing section of Homer Township along 143rd Street, just east of the FAP Route 340 corridor. The Fire Station located on 143rd Street is not only a valuable public facility constructed in 1983 that must remain operational, but it is also used as a community meeting hall. Three main streams (Fiddymont Creek, Big Run, and Long Run) and several tributaries are spread out in the middle section. The various floodplain crossings connected with these waterways pose some drainage concerns.

A prefabricated "Lustron" house, located on 135th Street, has been determined to be eligible for listing on the National Register of Historic Places by the Illinois State Historic Preservation Office. If FAP Route 340 were to become a federally funded project, the architectural significance of the structure would necessitate the Section 106 coordination provided in Section 4.8.1 of this **Final** Environmental Impact Statement and Section 4(f) Evaluation. Since the building's rural setting contributes to its qualification for the National Register, Section 4(f) regulations also apply to the house if FAP Route 340 were to become a federally funded project.

ISTHA acknowledges that, where applicable, state laws concerning preservation of historic property, such as the Illinois State Agency Historic Resources Preservation Act, govern the project. Section 3.4 of this Report identifies the alternate alignments considered to avoid impacting the Lustron house.



**Table 3-1  
Impact Evaluation Matrix**

IMPACT	UNIT	SEGMENT									
		S-1	S-2	S-2A*	S-3	M-1	M-2	M-2A*	N-1	N-2	N-2A*
Residential Displacement	Number	15	20	15	19	35	21	26	1	1	1
Business Displacement	Number	0	0	0	1	2	1	1	2	2	2
Farmland ** Displacement	Acres	390	390	390	390	196	196	196	110	110	110
Stream Crossings	Number	12	13	14	13	19	19	16	4	4	4
Noise Sites ***	Number	10	10	7	10	11	13	15	0	0	10
Air Quality	Number	Note: Analysis indicates no site will incur adverse impacts to air quality.									
Structures	Number	10	10	13	12	6	6	7	5	5	7
Roadway Length	Mile	4.8	4.8	5.0	4.9	4.1	4.1	4.1	3.5	3.5	3.5
Threatened & Endangered Species: Critical Habitat	Number	0	0	0	0	0	0	0	0	0	0
Wetland Displacement	Acres	4.6	3.1	3.0	5.1	5.1	8.1	2.5	4.4	4.4	4.9

\* Preferred Alignment = S-2A, M-2A, N-2A

\*\* Impact only calculated for preferred alignment.

Other alignment segments approximated from aerial photography and Land Use Mapping.

\*\*\* Predicted to approach or exceed noise level criteria, based on 2010 traffic.

Note: -Impacts evaluated based on 1988 aerial photography.

-Northwest Homer Fire Protection District Station #1 displaced by Alignment M-1.

-Impacts due to the facility being a tollway as opposed to a freeway will add an additional **10** residential displacements for a total of **52** (Preferred Alignment).

-Wetland impacts in Des Plaines River Valley were estimated for Alternates N-1 and N-2 based on the similar bridge construction method **recommended** for Alternate N-2A.

### Alternate M-1

The alignment on the recorded centerline, noted as Alternate M-1 on Exhibit 3-4, begins at Illinois Route 7 (159th Street) with a diamond interchange. It proceeds north passing about one and one half miles east of Lockport. The crossing at 151st Street would be grade separated over FAP Route 340. Alternate M-1 goes through the middle of a large wetland on the north side of 151st Street. The impacts from the freeway/tollway mainline and the fill resulting from elevating 151st Street would drastically damage the wetland's functional value. The high quality wetland near the Lockport Heights Subdivision is avoided, but the recorded alignment displaces the Northwest Homer Fire Protection Station No. 1 and the wetlands directly to the south. Relocation of the Fire Station has been estimated at approximately \$3 million.

Continuing north, two interchange options were studied at 143rd Street and also Illinois Route 171 (Archer Avenue). The proximity of the two crossroads to each other and the differences in the existing grades limit the potential design options. In one option, a diamond interchange would be

provided at either 143rd Street or Illinois Route 171 (Archer Avenue) with the other being grade separated; another option consists of a split diamond with two ramps provided at each 143rd Street and Illinois Route 171. Since Illinois Route 171 is a marked State highway and 143rd Street is a major east-west street and for operational considerations, a split diamond interchange was decided on for 143rd Street/Illinois Route 171. This interchange configuration reduces impacts to the 143rd Street and Illinois Route 171 intersection. With a diamond interchange, a high volume of vehicles would be using the severely skewed intersection that would otherwise be avoided with the split diamond interchange. With both interchange design options, the Silver Ranch, a business which boards and trains horses, will be within the [word deleted] right-of-way. The Silver Ranch is on Illinois Route 171 near 139th Street. A grade separation would be provided over 135th Street for the mainline. North of 135th Street, Alternate M-1 turns to the northwest and passes west of Lemont. A diamond interchange is **recommended** at 127th Street.

Alternate M-1 displaces seven residences on the west side of Gordon Lane at 135th Street and splits the Cache Lake Subdivision for a total of 35 residential relocations, with an additional 14 houses requiring modified access. A cul-de-sac on 139th Street at Illinois Route 171 would be provided for operational reasons and to save extra houses at that intersection.

From a drainage perspective, Alternate M-1 would span all the floodplains in the area except the south tributary to Long Run near Illinois Route 171. The interchange at this location would fill a section of the floodplain, but additional detention compensation would also be provided within the interchange right-of-way as mitigation. Although the recorded alignment would not displace the Lustron house directly, it would adversely affect the structure since the alignment would destroy the rural setting that surrounds the house. Mitigation of this adverse effect could involve relocating the Lustron house to a new location with a similar setting. Provided that there are no feasible and prudent alternatives which avoid the Lustron house (refer to Section 3.4), relocating the structure would also satisfy the provisions of Section 4(f) of the Department of Transportation Act (49 U.S.C. 303).

As a result of the wetland impacts and displacements of the Fire Station, alternate alignments to the east and west were studied. Initially, an alignment (Alternate M-2) was developed which minimized involvement with constraints in the middle section. After wetland delineations were completed in July, 1992, minor shifts were investigated between Illinois Route 7 and 135th Street to avoid severe wetland impacts, resulting in the creation of Alternate M-2A.

### Alternate M-2

The alignment presented at the second Public Meeting in July, 1988 which minimized displacements (Alternate M-2) was about 500 feet west of and parallel to Alternate M-1 as shown on Exhibit 3-4. The two alignments diverge at Illinois Route 7 (159th Street) and then cross again north of 127th Street, near New Avenue. The Lockport Heights Subdivision is located approximately 600 feet west of Alternate M-2. This alignment avoids the homes along Gordon Lane at 135th Street and crosses the western edge of the Cache Lake Subdivision. Alternate M-2 would require displacement of 21 homes along with new access for 15 other houses. Larger shifts to the west including going through the private Lemont Landing Field (**also known as Maletich & Dineff Restricted Landing Area**), as well as shifts to the east near Coke Road, were investigated. However, these other areas contained more densely populated subdivisions.

Since Alternate M-2 is west of Alternate M-1 along 143rd Street, the distance to the intersection of 143rd Street and Illinois Route 171 is shorter. To optimize traffic operations with this intersection and to provide access to both crossroads, a split-diamond interchange was chosen for Alternate M-2 at 143rd Street/Illinois Route 171. This configuration also would accommodate all of the traffic movements entering and exiting FAP Route 340. An advantage of Alternate M-2 is that it avoids displacing the Northwest Homer Fire Protection District Station No. 1, allowing the public service facility to remain outside the interchange area. The centerline of 143rd Street was also shifted approximately 22 feet south to maintain emergency access to the Fire Station in spite of construction activities and potential elevation changes. Special considerations, including active coordination with the Fire Station, are justified because the Northwest Homer Fire Protection District Station No. 1 is a public facility that cannot be easily relocated while still remaining operational.

A cul-de-sac on 139th Street at Illinois Route 171 would be provided for this alignment similar to the recorded alignment, except residential impacts at this intersection would be reduced since Alternate M-2 is west of Alternate M-1. Alternate M-2 would span all the floodplains in the area without any significant conflicts. The Silver Ranch would still be impacted.

Two features of Alternate M-2 resulted in shifts being considered for the middle section: wetland involvement and Section 106/4(f) impacts. Alternate M-2 and the grade separation at 151st Street would require filling in several environmentally sensitive areas including the majority of a wetland just north of 151st Street, the high quality wetland identified near the Lockport Heights Subdivision, and the small grouping of wetlands south of the Fire Station. In order to comply with Executive Order 11990, shifted alignments were studied to find a practicable alternative to Alternate M-2. The impact to the Lustron house would be the same for Alternate M-2 as that described for Alternate M-1, the setting would be destroyed and relocation necessary. Again, to satisfy federal regulations regarding Section 106 of the National Historic Preservation Act of 1966 as well as Section 4(f) of the Department of Transportation Act of 1966 requirements, shifted alignments were investigated to avoid the prefabricated structure.

#### Alternate M-2A

Various shifts from Alternate M-2 were analyzed to primarily avoid wetlands and not adversely affect the Lustron house. Alignment shifts were developed to the east and west with geometric constraints and existing land uses restricting the size of the shifts. The route finally established (Alternate M-2A on Exhibit 3-4) departs from Alternate M-2 at Illinois Route 7 going west. Alternate M-2A then crosses back east between 151st Street and 143rd Street to be about 900 feet east of Alternate M-2 at 143rd Street. The shift continues north on a long tangent section joining Alternate M-2 north of 135th Street.

Since the wetlands and the historic structure are spread out across the middle section, a feasible alignment was not found that would avoid all the wetlands and not have at least visual impacts to the Lustron house that would still require mitigation for the adverse effect. Therefore, an alignment was created that minimizes impacts to these environmental features. Alternate M-2A clips the western edge of the wetland at 151st Street, but since the alignment was shifted west, the grade separation with 151st Street would not displace as much of this wetland as with either of the other

two Alternates (M-1, M-2). The shift at this location was limited by the Big Run tributary crossing to the west, and by the wetland and Gougar Road intersection to the east. Near 143rd Street, any shift less than Alternate M-2A would involve relocating the Fire Station and filling in several wetlands in the immediate vicinity. Groups of newly constructed houses to the east along 143rd Street prohibit moving the alignment further in that direction.

A cul-de-sac is **recommended** on 139th Street east of Alternate M-2A with access maintained to Illinois Route 171 from Coke Road. This shifted alignment would directly impact the Silver Ranch on Illinois Route 171 and the Lustron house just south of 135th Street. Alternates which avoid the historical Section 106/4(f) structure were investigated and as Section 3.4 of this Report concludes, complete avoidance of the Lustron House was not feasible. Next, minimizing impacts to this historic property were considered. Based on coordination with the Illinois State Historic Preservation Office, in order to have no adverse effect on the Lustron house, the existing tree lines would have to be maintained as a visual buffer to the freeway/tollway. Eliminating the tree buffer would destroy the rural setting and result in visual impacts. Shifting the alignment east or west to maintain the existing trees is restricted by factors such as other residential locations and interchange geometrics. Established residential neighborhoods are located to the east near Gordon Lane, 139th Street, and Coke Road. While to the west, development is occurring north of 135th Street and also along Illinois Route 171 (Archer Avenue). Additionally, a western shift would complicate traffic operations at the split-diamond interchange due to its proximity to the intersection of 143rd Street and Illinois Route 171. Since there are no prudent alternatives that preserve this buffer, minimizing impacts to the Lustron house at its current location is not a viable option. The cost of relocation is low due to the prefabricated nature of the structure, thus the house could be relocated as mitigation for involvement with Section 106/4(f) property and in compliance with the Illinois State Agency Historic Resources Preservation Act. In addition to these impacts, Alternate M-2A would displace 26 houses with modified access needed for 10 residences.

Drainage concerns for this alignment are similar to those for Alternate M-1. Compensatory storage for the south branch of Long Run is **recommended** inside the interchange between 143rd Street and Illinois Route 171. This mitigation would be within the right-of-way needed for the split diamond interchange.

### Summary Comparison of Alternate Alignments in the Middle Section

Environmental studies identified jurisdictional wetlands throughout the Middle Section, which by federal regulations, have to be avoided if a practicable alternate exists. As the preceding section has shown, there are no practicable alternate alignments that avoid all of the wetlands between Illinois Route 7 and 127th Street. Factors such as existing residential developments, stream and floodplain crossings, and geometric criteria limit the range of feasible alignments. Since total avoidance is not practicable, minimization of wetland impacts was necessary.

Table 3-1 summarizes some of the impacts associated with the alternate alignments. In the Middle Section, examination of the alignment shifts indicates several benefits from constructing FAP Route 340 on Alternate M-2A. The primary advantage is a reduction in the amount of wetlands to be filled. Alternate M-2A would only affect the western edge of the wetland at 151st Street instead of splitting the natural habitat area down the middle. This alignment will also avoid the high quality wetland near the Lockport Heights Subdivision that would be significantly impacted by

Alternate M-2. The shifted alignment decreases wetland involvement by over 50 percent compared to Alternate M-2, with only 2.5 acres filled by Alternate M-2A. Alternate M-2A reduces residential displacements by 9 houses for a total of 26 homes as compared to Alternate M-1. IDOT's freeway/tollway design was used to compare the alternate alignments. **Once the preferred alignment was selected, the ISTHA design was overlaid on IDOT's design and any changes in impacts were then assessed.** ISTHA's actual tollway design will displace seven additional houses with Alternate S-2A for a total of 33 houses. **Table 3-1 includes any adjustments to wetland displacements that the ISTHA design will impact.** The Northwest Homer Fire Protection District Station No. 1, built on the recorded centerline, is also saved by this shifted alignment.

However, several impacts would be similar for all three alignments: the historically significant Lustron house would be relocated; approximately 196 acres of agricultural farmland would be taken; and a major pipeline corridor south of Illinois Route 171 would have to be adjusted. There are also two Commonwealth Edison transmission line crossings in the Middle Section near Illinois Route 171 and 135th Street. Coordination with Commonwealth Edison is ongoing for relocation of the transmission lines and towers. Also, the Silver Ranch is impacted for all three alignments.

The final selection of an alternate alignment [word deleted] was not [word deleted] made until all of the alternatives' impacts and comments on [word deleted] the *Supplement to the Draft Environmental Impact Statement and Section 4(f) Evaluation* (and from the Public Hearings) [word deleted] had been fully evaluated. [word deleted] Based on the evaluation of the impacts from the various alternates, [phrase deleted] the preferred alignment in the Middle Section is Alternate M-2A.

### 3.3.3 Northern Section - 127th Street to Interstate Route 55

Several issues were considered when alignments were developed in the northern section, with the primary concern being avoidance of Section 4(f) property (refer to Exhibit 3-5). Section 5.2 describes the Section 4(f) lands in the Des Plaines River Valley that are protected by federal regulations. The River Valley is also occupied by industrial development such as railroad yards and barge companies as well as waterway facilities including the Illinois and Michigan Canal, the Chicago Sanitary and Ship Canal, and the Des Plaines River. The industrial refineries and cemeteries along 127th Street also restrict the space available for the freeway/tollway alignment.

#### Alternate N-1

The first alignment evaluated for this section was on the recorded centerline, Alternate N-1, which begins with a diamond interchange at 127th Street (see Exhibit 3-5). This interchange is adjacent to the Lemont Centennial Park. Recreational activities would be maintained at the park, but roadway construction would temporarily affect traffic movements at the facility. Property would have to be purchased for right-of-way from both the Saint Matthews and Danish Cemeteries with grave sites also relocated. Three proposed private developments to the west, Aero Landings on the Lemont Landing Field, Argonne Research and Industrial Park, and Rolling Meadows of Lemont would have direct access to FAP Route 340 by way of the 127th Street interchange without being directly impacted.

As the alignment passes above New Avenue, it turns north as it goes over the Des Plaines River Valley on a bridge over one mile long, touching back down just north of Bluff Road. Southwest Stainless, Inc. currently leases a prefabricated warehouse and an adjacent open storage yard within the **required** right-of-way located just south of New Avenue. This business would have to be relocated due to the FAP Route 340 alignment. The three waterways in the River Valley will all be crossed on the long bridge, maintaining all required clearances. By staying within the right-of-way the Illinois Department of Transportation has acquired between Bluff Road and Davey Road, direct impacts to recreational land in Cook County's Black Partridge Nature Preserve can be avoided. However, the recorded centerline is on a curve south of Bluff Road requiring right-of-way from the Cook County Forest Preserve area adjoining the river and from the Keepataw Forest Preserve purchased by Will County in 1977. The current stopping sight distance on Bluff Road is inadequate primarily because of the steep grades. The FAP Route 340 profile is constrained by truck speeds in the Des Plaines River Valley, thus limiting any further profile lowering. By removing the top of the hill on Bluff Road, the freeway/tollway profile could only be lowered slightly and Bluff Road would be minimally improved. However, this construction on Bluff Road may adversely affect the Keepataw Forest Preserve and was opposed by staff from the Will County Forest Preserve District at a meeting on January 12, 1990. Therefore, Bluff Road will remain as it is and the freeway/tollway will cross over it.

The recorded centerline displaces one house and requires new access for one other home. Although Alternate N-1 would not displace any homes in the proposed Bluff Oaks Estates Subdivision, the alignment would be directly adjacent to the development.

Within the Des Plaines River Valley, Alternate N-1 would involve Section 4(f) and Section 6(f) impacts for the bridge piers since they would be placed in the Keepataw Forest Preserve on land purchased with Land and Water Conservation (LAWCON) funds. In accordance with federal regulations, avoidance, minimization, and mitigation of these impacts must be considered.

Continuing north, Alternate N-1 crosses above Davey Road and the Santa Fe Railroad tracks on grade separated structures. The alignment then proceeds north to the southern terminus of the North-South Tollway (Interstate Route 355). At this point, a directional interchange with collector-distributor roads parallel to Interstate Route 55 will be provided. The north terminus is restricted by the location of the North-South Tollway interchange with Interstate Route 55, refer to Section 3.4.2; moving the centerline in this area would make it impracticable to meet the interchange with the given geometric constraints. The interchange at Interstate Route 55 is also limited by the adjacent interchange locations at Illinois Route 53, 2.3 miles to the west and Lemont Road, 1.5 miles to the east.

As part of the Interstate Route 55 interchange construction, the Joliet Road area will be improved with the frontage roads relocated. These improvements will displace the All Line Carstar Autobody Shop, one of the two businesses that would be relocated by Alternate N-1.

#### Alternate N-2

Initially, shifts in the centerline to avoid the Keepataw Forest Preserve were studied, but no prudent nor feasible alignment shifts north of the Des Plaines River were identified that avoided forest preserve property. Therefore, south of the Des Plaines River Alternate N-2 was investigated. This

alignment moves the curve going over the Chicago Sanitary and Ship Canal farther southwest and the tangent alignment that is north of 127th Street is moved 200 feet parallel to the southwest as shown on Exhibit 3-5. Alternate N-2 moves the freeway/tollway farther away from the turning basin in the Chicago Sanitary and Ship Canal; however, the shift is limited by the clear zone requirements for the Lemont Landing Field located north of 127th Street. The Lemont Landing Field is a private facility and FAP Route 340 avoids conflicts with it by being below the clear zone. However, Alternate N-2 would need property from the northeast corner of the proposed Aero Landings development and the northeastern half of the proposed Argonne Research and Industrial Park. A small section of frontage property from the Rolling Meadows of Lemont Subdivision would also be needed to provide an access road. Regardless of the Landing Field, further shifts west require additional houses near Smith Road. This alternate alignment also shifts the freeway/tollway away from the Lemont Centennial Park and the two cemeteries located on 127th Street. There would still be direct impacts to recreational land associated with the Keepataw Forest Preserve. Alternate N-2 would require one home and it would displace two businesses (Southwest Stainless, Inc. on New Avenue and the All Line Carstar Autobody Shop on Joliet Road) while requiring new access for two houses. The improvements at Joliet Road would be done with all of the alternate alignments.

#### Alternate N-2A

As a result of the field review with numerous environmental agencies in March of 1990 (see Section 6.3), alternate alignments to avoid Section 4(f) impacts were created in the northern area. Due to input from the various review agencies regarding limiting the proximity to the Black Partridge Nature Preserve, a range of optional alignment shifts was considered. A complete discussion of these shift options is in Section 3.4 of this **Final** Environmental Impact Statement and Section 4(f) Evaluation. The first shift evaluated was approximately 1500 feet west of the Black Partridge Nature Preserve, providing a buffer zone between the freeway/tollway and the environmentally sensitive Nature Preserve in the Northern Section. Typical of most of the shifts looked at, impacts from this alignment were prohibitive. The shift placed the alignment in the middle of Keepataw Forest Preserve. In addition to causing roadway edge effects in the middle of this preserve (such as salt spray and non-native plants), this alignment impacted a sensitive fen area in Keepataw. This shift also disrupted an established residential area.

Since Section 3.4 concludes that there are no feasible alignment options to avoid the use of all Section 4(f) properties, the preferred alignment will involve the location with the least disturbance. As shown on Exhibit 3-5, Alternate N-2A was shifted 350 feet west of the recorded alignment, Alternate N-1. The new shifted alignment places the [word deleted] centerline 500 feet west of Black Partridge Nature Preserve. This shift puts the alignment near the eastern edge of Keepataw Forest Preserve, crossing at an optimal location since it is not a primary habitat for threatened and endangered species and the area has previously been disturbed for grading. Alternate N-2A also touches a ridge near Bluff Road (utilizing the natural drainage of the ridge) and avoids a residential area.

Although Alternate N-2A minimizes environmental impacts, it does have certain disadvantages regarding residential displacements. This shifted alignment requires relocating one house and two businesses (Southwest Stainless, Inc. and the All Line Carstar Autobody Shop) with modified access needed for two other homes. Several proposed developments would also be affected. Aero

Landings, the Argonne Research and Industrial Park, and Rolling Meadows of Lemont on 127th Street would all be affected the same as for Alternate N-2. Additional property would be taken from the Bluff Oaks Estates Subdivision north of Bluff Road and the Oak Ridge Estates Subdivision south of Davey Road for right-of-way.

### Summary Comparison of Alternate Alignments in the Northern Section

After studying the alternate alignments in the Northern Section and determining that there are no prudent nor feasible routes available to avoid Section 4(f) impacts, Alternate N-2A was identified as having several advantages. First, effects to the Keepataw Forest Preserve are minimized by being away from the central and western portions where the *Biological Assessment Report* identified the property as potential critical habitat for threatened and endangered species. Next, Alternate N-2A provides a buffer between the Black Partridge Nature Preserve for which the other two alternates do not allow. This alignment avoids the Lemont Landing Field and the turning basin area on the Chicago Sanitary and Ship Canal, while still meeting the North-South Tollway at Interstate Route 55. Alternate N-2A also moves FAP Route 340 further away from the Lemont Centennial Park and the adjacent cemeteries than Alternate N-1, thus avoiding work on cemetery property. The alignment would displace one house and two businesses, the same as Alternates N-1 and N-2. **IDOT's freeway/tollway design was used to compare the alternate alignments. Once the preferred alignment was selected, the ISTHA design was overlaid on IDOT's design and any changes in impacts were then assessed. ISTHA's actual tollway design will not displace additional houses with Alternate N-2A.** Alternate N-2A displaces about 4.9 acres of wetlands, or 0.5 acres more than the other two alignments. These totals assume that the bridge construction method will be similar to that **recommended** for the preferred alignment with a haul road. **Table 3-1 includes any adjustments to wetland displacements that the ISTHA design will impact.**

With all of the alternate alignments, construction will be necessary near Interstate Route 55 in order to connect to the North-South Tollway. Extra ramps and lane additions would be incorporated to modify the existing trumpet interchange into a full interchange. Agricultural farmland impacts would be about the same (110 acres) for the three alignment options since the alternates are very close to each other in areas where farmland is located. Table 3-1 summarizes some of the impacts associated with the alternate alignments.

The final selection of an alternate alignment **[word deleted]** was not **[word deleted]** made until all of the alternatives' impacts and comments on **[word deleted]** the *Supplement to the Draft Environmental Impact Statement and Section 4(f) Evaluation* (and from the Public Hearings) have been fully evaluated. **[word deleted]** Based on the evaluation of the impacts from the various alternates, **[phrase deleted]** the preferred alignment in the Northern Section is Alternate N-2A.

### **3.4 Build Alternative - Freeway/Tollway Alternate Alignments to Avoid Section 4(f) Property Impacts**

The **recommended** FAP Route 340 begins at Interstate Route 80, proceeds north crossing the Des Plaines River, and joins Interstate Route 55 serving as a transportation link with the existing North-South Tollway (Interstate Route 355). As stated in Chapter 1, Purpose of and Need for Action, there is a need for a connection to Interstate Route 55 and Interstate Route 355. FAP Route 340



will also cross the Des Plaines River to access the developing areas of Will County. As discussed in the previous sections, the preferred alignment is the combination of alternates S-2A, M-2A, N-2A which is shown in Exhibit 3-6.

There were no Section 4(f) properties identified in the Southern Section that would be impacted by FAP Route 340. However, the Lustron house located on 135th Street (Middle Section) was determined to be property eligible for listing on the National Register of Historic Places, and thus a Section 106/4(f) property. The rural setting of the house also means that it must be avoided if prudent and feasible.

During the process of evaluating alternate alignments, various ranges of alignment shifts from the recorded centerline in the northern portion of the project area were considered to determine if impacts to Section 4(f) properties could be avoided. Sections 2.7 and 5.2 of this **Final** Environmental Impact Statement and Section 4(f) Evaluation describe the Section 4(f) properties found in the northern area. The Interstate Route 55 interchange location options are restricted by design and space limitations. The interchange placement is also limited by operational and safety reasons, and the proximity to the Illinois Route 53 interchange to the west and the Lemont Road interchange to the east. The ultimate issue for this impact avoidance involves determining where a crossing would cause the least disturbance, thus minimizing impacts to Section 4(f) property. Avoidance alternatives, including shifts in the **[word deleted]** roadway alignment to the east and west and vertical alignment changes were considered. These options are discussed below and the constraints are shown in Exhibits 3-7 and 3-8.

### **3.4.1 Alternate Alignments to Avoid the Lustron House**

As an architecturally significant historic building, the Lustron house located on 135th Street in the Middle Section qualifies as a Section 4(f) property (see Exhibit 5-1). After coordination with the Illinois State Historic Preservation Office, it was determined that the structure would be adversely affected by FAP Route 340 unless the alignment was shifted enough to maintain the existing tree lines as a buffer. In evaluating various alternate alignments to avoid the Lustron house, shifts to the east and west were examined. Constraints that limit potential shifts include the proximity to Gordon Lane, existing residential locations, local businesses, and the interchange geometrics at 143rd Street and Illinois Route 171 (Archer Avenue). Minor shifts to avoid the Lustron house, but not the tree buffer were not feasible since visual effects from FAP Route 340 would still require mitigation for the adverse effect.

Shifting the alignment east would displace approximately 15 additional houses in the Cache Lake Subdivision, residences along Gordon Lane, and homes near 139th Street. Interchange operations would also be complicated by the sharp skew angle at Illinois Route 171. Residential density increases toward the east with older, established neighborhoods near Coke Road and newer houses built east of Gordon Lane. Several businesses are also located along Illinois Route 171 about one-half mile east of the recorded alignment.

West of the Lustron house, development is occurring north of 135th Street and also along Illinois Route 171. A western shift to keep the existing tree buffer could encroach upon these developing areas. The Homer Tree Service on Illinois Route 171 would also be relocated. Going further west

reduces the distance between 143rd Street and Illinois Route 171, creating complex traffic operations associated with an interchange between these two crossroads.

Since there were no prudent or feasible alternate alignments identified to avoid the Lustron house the next consideration is to minimize impacts to this property. Consultation for mitigation of the adverse effect is continuing at this time. The **recommended** mitigation for this property is the relocation of the structure to a parcel with a similar setting.

### **3.4.2 Alternate Interchange Locations on Interstate Route 55**

As a means of avoiding Section 4(f) property near the Des Plaines River, optional interchange locations along Interstate Route 55 were investigated. To satisfy traffic operations at Interstate Route 55, expected traffic volumes must be handled efficiently and safely. With the geometric constraints for the freeway/tollway, it is physically not practicable to shift the connection point east or west of its **recommended** location at Interstate Route 355. A shift in either direction resulting in a split connection would have to be large enough to develop sufficient length to accommodate the weaving patterns that would result on the additional traffic lanes that would be needed along Interstate Route 55.

A shift to the east is not prudent nor feasible because the placement is limited by the interchange at Lemont Road (about 1.5 miles east) on Interstate Route 55, shown on Exhibit 3-7. The distance between Interstate Route 355 and Lemont Road is insufficient to provide another interchange while maintaining safe traffic operations. To cross east of Lemont Road with FAP Route 340 would destroy the continuity of the **[word deleted]** highway network, and not serve the project Purpose and Need of providing a continuous north-south route in the study area. A new interchange location east would be contrary to the land use plans of the local agencies.

A shift of the interchange to the west is also not prudent nor feasible for similar reasons. It is not possible to effectively accommodate another interchange along Interstate Route 55 between Interstate Route 355 and Illinois Route 53. Exhibit 3-8 shows the proximity of the Illinois Route 53 interchange to Interstate Route 355 (about 2.3 miles west). Crossing west of Illinois Route 53 is not feasible due to the geometric design limits.

### **3.4.3 Alternate Alignments Shifted East**

#### ***3.4.3.1 Alternate Alignment Shifted up to 0.5 Mile East***

Due to geometric constraints associated with maintaining the **recommended** interchange location at Interstate Route 355, the practical limit for an eastward shift is 0.25 mile east of the Will/Cook County Line. However, as Exhibit 3-7 indicates, this limit is not feasible as avoidance since the Black Partridge Nature Preserve is directly east of the County Line and any shift to the east of less than 0.5 mile would result in direct impacts to the Nature Preserve. In addition, the Lemont Woods (**Wood Ridge**) Forest Preserve purchased by the DuPage County Forest Preserve District **in 1989** is contiguous on the south side with the Black Partridge Nature Preserve and extends further east. The Black Partridge Forest Preserve extends south of Bluff Road and east of the Nature Preserve encompassing numerous wetland areas along the Des Plaines River. Both of these properties would be split by an eastward shift within the limits discussed in this section.

#### ***3.4.3.2 Alternate Alignment Shifted Between 0.5 and 1.25 Miles East***

An eastward shift between 0.5 and 1.25 miles would put the roadway through the environmentally sensitive Goose Lake area as indicated by biological resource studies. Several state endangered species forage within and around this lake such as heron and other water fowl.

The wetland areas of the Cook County Forest Preserve extend eastward and end in close proximity to the Lemont Road bridge in Lemont. An eastward shift avoiding the Lemont Woods (**Wood Ridge**) Forest Preserve, Goose Lake, and these wetlands is impossible within the 0.5 to 1.25 miles limit discussed in this section.

#### ***3.4.3.3 Alternate Alignment Shifted Over 1.25 Miles East***

An eastward shift between 1.25 and 1.5 miles would result in a conflict with the present Lemont Road bridge crossing the Des Plaines River at the eastern boundary of Cook County's Black Partridge Forest Preserve. A shift of this magnitude would also cause traffic and residential disruption in the local area.

A shift over 1.5 miles would place the alignment at a crossing within the City of Lemont. Bridging the Des Plaines River at this location would result in the displacement of over 60 businesses and residences on the south side of the river. This shift would result in serious community disruption. An additional eastward shift to avoid the City of Lemont would place the River Valley crossing through the Argonne National Laboratory Reservation and other Cook County Forest Preserve lands.

#### ***3.4.3.4 Summary of Alternate Alignments Shifted East***

While alignment shifts eastward to avoid Section 4(f) properties were limited to 0.25 mile by highway safety considerations, even larger shifts were investigated. Exhibit 3-7 includes constraints that indicate that an eastward shift of the alignment for total avoidance of Section 4(f) properties would not be prudent nor feasible because of the existing Lemont Road Bridge and the

displacement impacts with the Village of Lemont. Shifting the alignment east over 1.5 miles would not satisfy the project's Purpose and Need.

### **3.4.4 Alternate Alignments Shifted West**

#### ***3.4.4.1 Alternate Alignment Shifted up to 0.15 Mile West***

A westward shift of up to 0.15 mile would still intersect the Keepataw Forest Preserve, but in an area that has already been disturbed by grading (see Exhibit 3-8). Environmental studies have indicated that primary habitat for the threatened and endangered species in the project area have not been found within this 0.15 mile limit discussed above.

#### ***3.4.4.2 Alternate Alignment Shifted Between 0.15 and 0.75 Mile West***

Shifting the alignment between 0.15 and 0.75 mile west would place the alignment in the alkaline fen and sedge meadow/marsh complex that has been identified in this area of the Keepataw Forest Preserve (Taft, 1989). An alignment in this range would severely disturb the environmentally sensitive area that includes the state **endangered** plant, *Arenaria patula*, as well as various other threatened and endangered species such as the Hine's emerald dragonfly that have been identified.

This location would also negatively affect the trails and parking lot that Will County developed as part of its Land and Water Conservation (LAWCON) requirements for Keepataw Forest Preserve. An established residential community of approximately 30 homes on the north side of Bluff Road is within the limits discussed in this Section and would be disrupted by an alignment shift between 0.15 and 0.75 mile.

#### ***3.4.4.3 Alternate Alignment Shifted Between 0.75 and 1.5 Miles West***

A shift of the **preferred** alignment to the west to totally avoid use of existing Section 4(f) properties would require a movement of over 0.75 mile. This shift would avoid the Keepataw Forest Preserve west of the **preferred** alignment. However, the alignment would then be placed in property proposed for purchase by the Will County Forest Preserve District as delineated on Exhibit 3-8 which is also known habitat for the state endangered spotted turtle. The Forest Preserve District plans to purchase this property before the construction of FAP Route 340 making avoidance of Section 4(f) property still impractical. Additional environmentally sensitive areas are encountered further west of the existing and proposed forest preserves. Veterans Memorial Woods is located less than one mile west of the Keepataw Forest Preserve.

The Land and Lakes Landfill is located between Veterans Memorial Woods and the Keepataw Forest Preserve. This landfill has historically accepted municipal solid wastes, and has monitored local soil and water conditions. Environmental reports have indicated that threatened and endangered species such as the spotted turtle have been found in these western areas. Avoidance of these areas would require a westward shift of over 1.5 miles.

South of the Des Plaines River there are various oil refineries and industries within the range discussed above. Impacts from an alignment shift would be economically disruptive and potentially cause environmental hazards with regards to chemical contaminations and public safety.

#### ***3.4.4.4 Alternate Alignment Shifted Over 1.5 Miles West***

An alignment shift over 1.5 miles west would result in the freeway/tollway being west of Veterans Memorial Woods and the landfill, but places the freeway/tollway through or adjacent to the existing oil refineries. Displacement of a refinery would cause not only economic and industrial disruption resulting in employment hardships, but also could have environmental concerns related to on-site hazardous waste storage areas and wastewater treatment facilities. The industrial corridor in the Des Plaines River Valley contains large factory buildings that would be difficult to avoid as well as expensive to relocate, plus there would be potential for hazardous waste sites there too. An alignment west of Veterans Memorial Woods would also pass near Romeoville Prairie Nature Preserve. A suitable crossing of the Des Plaines River could not be found north of 135th Street. This crossing location would prevent Lemont from having access to the project as well as being contrary to land use planning being done by local agencies.

#### ***3.4.4.5 Summary of Alternate Alignments Shifted West***

Shifting the alignment more than 0.15 mile to the west to avoid existing and proposed Section 4(f) properties appears not to be prudent nor feasible because of the heavy industry in the area, the increased potential for encountering hazardous waste materials and increased potential for encountering environmentally sensitive areas. Exhibit 3-8 shows the significant features involved with western alignment shifts. If the alignment was shifted too far to the west, it would not be possible to satisfy the purpose of the project.

Since the previous discussion indicated no prudent or feasible alignment options to avoid the use of all Section 4(f) properties, the preferred alignment will involve the location with the least disturbance. Based on the environmental analyses, an alternate alignment shift up to 0.15 mile west would be feasible. Within this allowable range, the least impact alignment is that which was shifted 350 ft. west of the recorded alignment. This alignment crosses over a ridge near Bluff Road. The "ridge alignment" utilizes the natural drainage divide to maintain existing drainage flow. This alignment also does not touch the Black Partridge Nature Preserve, while crossing the Keepataw Forest Preserve at an optimal location since it is not a primary habitat for threatened and endangered species and the area has previously been disturbed for grading. This alignment is discussed in Section 3.3.3 as Alternate N-2A. For a description of the measures to minimize harm, refer to Section 5.5.

### **3.5 Build Alternative - Freeway/Tollway Alternate Des Plaines River Valley Bridge Construction**

Two bridge type alternates are being considered for the Des Plaines River Valley bridge, concrete and steel. An artistic rendering of each type is shown in Exhibit 3-9 and 3-10. Both structures are approximately 6,600 feet long and are a minimum of 70 feet above the valley floor and the Des Plaines River. The bridge spans a diverse land use that includes two canals, a river, several railroad lines, two roadways, and a forest preserve. The bridge is a significant element of the project and as such requires further discussion.

Both alternates are designed to accommodate three lanes of traffic and full left and right shoulders for both northbound and southbound traffic. Using Illinois State Toll Highway Authority (ISTHA) criteria for lane and shoulder widths, the northbound and southbound bridges both have 61 feet 6 inches clear between the faces of the concrete barriers on the bridge. The total bridge width for both northbound and southbound will be approximately 129 feet. The entire length of the mainline including the Des Plaines River Valley bridge will be lighted along the median in accordance with current criteria for Tollway construction. The bridge will be illuminated by median mounted light poles with double mast arms and the span over the Sanitary and Ship Canal will be marked with Channel Marker lights. Special designs will be investigated to avoid conflict between the lighting units on the Des Plaines River Valley bridge and the Commonwealth Edison tower lines. Roadway lighting will be designed to minimize light spillage outside the **required** right-of-way.

The bridge will be drained by a surface collection system that has downspouts at every pier. The primary goal of the drainage system is to drain the bridge using a reliable system that separates contaminated runoff from the adjacent wetlands. To this end, a storm drainage pipe will be constructed under the access road to convey the stormwater from the piers to the Des Plaines River. At the base of each pier a structure will separate low flows from any excess flows. The low flows will be directed to the pipe while the excess flows will be allowed to spill out into the adjacent wetlands. The excess flows would be associated with storms of rainfall intensity higher than a two-year storm. At the outfall of the pipe a stilling basin would be constructed to dissipate energy and to settle out any solids. The drainage system outlined in the *Draft Environmental Impact Statement and Section 4(f) Evaluation (DEIS)*, pipes suspended from the bridge, has been determined to be unreliable and excessively expensive.

In the *DEIS* two construction approaches were under consideration. The two construction approaches considered were to avoid construction impacts to sensitive areas near the bridge or minimize the construction impacts. The first construction approach would use conventional construction methods with a haul road while the second approach would use a launching system supported by previously built spans without the need for a haul road.

In conjunction with the first bridge construction approach, two options for the development of a haul road were considered. The first haul road option began at Bluff Road across from the entrance to the parking lot of Black Partridge Nature Preserve and followed the alignment of an old access path that has not been utilized in recent years that goes through lands owned by the Forest Preserve Districts of Cook and Will Counties. The second haul road option used the Commonwealth Edison service road from Lemont Road to the bridge construction area.

After further coordination and design efforts, the Illinois State Toll Highway Authority (ISTHA) has decided to utilize the first construction approach with an access modification. Refer to Exhibits 3-11 and 3-12 for the layout of the bridge piers and haul road. Both the concrete and steel bridge alternates will utilize a haul/access road within the Keepataw Forest Preserve. Through coordination, the Forest Preserve District of Cook County has indicated that the previous option to connect into the Black Partridge Forest Preserve was not favorable.

Construction access to the bridge will be from an existing gravel road on the south bank of the Des Plaines River. A low level bridge will be built from the south bank to an abandoned mule trail just north of the north bank of the river. The mule trail will be raised in elevation and widened to

accommodate construction equipment and traffic. The access road will continue north and extend to the last pier before Bluff Road. The path of the road has been established to minimize impacts to the wetlands and mature trees. Access to the piers will be provided by placing granular fill in the wetlands to create a work embankment. After completion of the bridge structure, the access road will be left in place to provide access to the piers for maintenance and inspection. The main access road and pier access will, however, be reduced in width to accommodate only maintenance and inspection vehicles. The access road could be used as a bikepath if desired by the Forest Preserve District of Will County. As this access road will require placement of fill in the floodway, compensatory storage will be provided between the Des Plaines River and the Chicago Sanitary and Ship Canal.

Also in the *DEIS* a variety of potential options for the development of a haul road have been discussed in conjunction with bikeway and construction uses. The potential options discussed were separated into three construction uses and two post-construction uses. The first of the three construction uses was to use the Commonwealth Edison service road as a haul road by the bridge contractor and the tower contractor. The service road would have been improved. Also, west of the bridge for about 4,000 feet, due to tower modifications, the service road would have required a slight widening and be raised for drainage. The second of the construction uses was to upgrade the service road for the raising of the towers only. The service road would have been widened slightly and raised for drainage. The upgrade would have begun at Lemont Road and ended 4000 feet west of the bridge. The total length of the upgrade would have been 11,500 feet. The third option was similar to the second, but access would have been via the haul road from Bluff Road as previously stated in the *DEIS*. The upgrade of the service road would have been 4,000 feet east and west of the bridge for a total of 8,000 feet and would have been used only by the tower contractor. The third option would have minimized disturbance to the Goose Lake area by not using the service road adjacent to the heron rookery. The second option, combined with the use of the low level bridge across the Des Plaines River, has been selected.

Coordination between ISTHA and Commonwealth Edison (see Appendix B **under Illinois State Toll Highway Authority**) has resulted in a reevaluation of the potential alternatives for adjusting the transmission lines running parallel to the Des Plaines River to accommodate the FAP Route 340 bridge. Commonwealth Edison has determined that dead-end towers could be installed on either side of the bridge and the transmission lines would then cross over the bridge. With this method of relocation, only the first two sets of transmission towers on either side of the bridge would be affected. Thus, the transmission line relocation work will be limited to an area approximately 1,200 feet in both directions from the centerline of the bridge. This construction process will result in a substantial reduction in potential environmental impacts as identified in the *DEIS* within the Des Plaines River Valley.

The first of the post-construction uses would be to return the service road to its original condition. All materials used for widening and raising would be removed. Access to the Valley would return to a pre-construction level, foot traffic only. The second option would be to remove any widening materials, but leave the higher grade in place for better drainage. This would allow the Forest Preserve District of Will County to develop a local bike network in the Valley. Coordination with Commonwealth Edison is ongoing to obtain input and concurrence of all actions. The first of the post construction uses of the service road has been selected. With the potential use of the access

road and the low level bridge as part of a bike trail system, the service road is no longer being considered for development.

The bridge structures will require a minimum right-of-way or permanent easement of 80 feet on each side of the centerline of FAP Route 340. Near the abutments and where the access road is required in Keepataw Forest Preserve, a larger permanent easement or right-of-way will be required. Additionally, permanent easements will be required on MWRDGC property, Village of Lemont property (I&M Canal and reserved land), and on property between the Illinois Central Railroad and the I&M Canal for access to the bridge for maintenance and inspection. Access to the portion of the bridge between the I&M Canal and the Atchison, Topeka and Santa Fe Railroad will require either an easement alongside the north bank of the I&M Canal beginning from downtown Lemont or a bridge or box culvert to cross the I&M Canal from the south bank.

### **3.6 Build Alternative - Freeway/Tollway Alternate Preferred Alignment**

Section 3.2 of this report presents the project alternatives evaluated for the FAP Route 340 corridor, concluding that the Build Alternative with a Freeway/Tollway Alternate would best satisfy the project's Purpose and Need. The various alternate alignments that were considered with their corresponding impacts are discussed in Section 3.3. Among the environmental constraints analyzed were the potential for involvement with Section 4(f) land and Section 6(f) property, avoiding and minimizing the filling of wetlands and floodplains, and avoidance of impacts to Section 106 properties eligible for inclusion in the National Register of Historic Places. Other factors which affected the alignments encompassed residential and business displacements, severance of prime farmlands, and community interests.

The preferred alignment for FAP Route 340 is shown on Exhibit 3-6 and designated in Table 3-1 as alternate S-2A, M-2A, and N-2A. Interchanges are **recommended** at Interstate Route 80, U.S. Route 6, Illinois Route 7 (159th Street), 143rd Street/Illinois Route 171 (Archer Avenue), 127th Street, and Interstate Route 55. **At one time, a staged improvement at 143rd Street/Illinois Route 171 (Archer Avenue) was contemplated as ISTHA expressed concern as to how they would operate the one-way frontage roads between Archer Avenue and 143rd Street in a manner consistent with their limited access requirements. However, negotiations between IDOT, ISTHA, and Will County determined that a staged improvement (initially a diamond interchange at Archer Avenue) would require additional improvements to the surrounding roadway network. It was therefore decided that a complete split diamond interchange will be constructed with Will County having jurisdiction of the one-way frontage roads between Archer Avenue and 143rd Street [phrase deleted]. [sentence deleted]** The preferred alignment avoids potential impacts whenever possible, minimizes impacts that are unavoidable, and mitigates negative effects from the construction of FAP Route 340. Evaluation of ISTHA's **required** right-of-way indicates that densely populated subdivisions are avoided, resulting in approximately **52** residential displacements along the preferred alignment and three businesses relocated. About **10.4** acres of wetlands will be affected by FAP Route 340 that will be replaced as part of the mitigation plan. As discussed in the previous Section 3.5, the Des Plaines River Valley will be crossed at a point of least impact to the sensitive forest preserves. As Table 3-1 shows, there were no critical habitats identified for threatened and endangered species along any of the alternate alignments.



Care shall be taken to minimize disturbances to the natural environment as explained in Section 4.23.

Tollway elements that are **recommended** for FAP Route 340 relate to toll collection facilities and maintenance. Two different types of toll collection will be included: a mainline toll plaza, and a ramp toll plaza. The mainline toll plaza **located just south of 167th Street (Division Street)** will consist of dedicated I-Pass lanes, manual and automatic lanes, and support buildings. The I-Pass system, using remote readers and transponders, will allow vehicles to maintain operating speed (55 mph) through the plaza. The manual and automatic lanes will be set off to the sides of the I-Pass lanes. Support buildings for the plaza will include an administrative building and an annex building. The ramp plazas typically consist of a single automatic collection lane. **Ramp plazas will be located at the following areas: NB exit ramp and SB entrance ramp at US Route 6; NB entrance ramp and SB exit ramp at IL Route 7; NB entrance ramp and SB exit ramp at IL Route 171; and NB entrance ramp and SB exit ramp at 127th Street.** A maintenance yard will be located adjacent to the mainline toll plaza administrative building and will consist of a garage, parking lot, and salt dome.

In accordance with Illinois Department of Transportation policy and in cooperation with the Illinois State Toll Highway Authority, provisions are being made for a bikeway along the preferred alignment. Design accommodations will allow local agencies to construct and operate a bikeway **adjacent to [words deleted]** the access control on the upstream (east) side of the highway for drainage considerations. Section 4.7 presents further details of the **[word deleted]** bikeway concept plan for FAP Route 340, including alternate options for crossing the Des Plaines River Valley.

Elements of the No-Action with TSM Alternative that can be incorporated into the preferred alternative are identified as follows:

- Forming a planning council to manage development patterns. This initiative has been started with the formation of the I-355 Southern Extension Corridor Planning Council (**Heritage Planning Council**).
- Use of coordinated traffic signals.
- Controlling access via use of barrier medians.
- Use of an enhanced I-Pass system. This system allows a vehicle to pass through a mainline toll plaza at normal operating speeds. A transponder, placed in a vehicle, would be read and debited at the plaza. FAP Route 340 would be the first facility to have this capability. The I-Pass system is considered a component of an Intelligent **Transportation** System, an important element of TSM.
- Use of congestion pricing. While not currently in place on the ISTHA system, congestion pricing could be implemented with relatively few facility related problems. Public response to such an initiative is unknown, however.
- Use of bikeways and pedestrian facilities. The bikeway initiatives contained within this project can also be considered part of TSM.

Elements of the Mass Transit Alternative that are recommended to be implemented as needed by transit agencies are identified as follows:

- Express bus service from residential areas in the project vicinity to employment centers in DuPage County and northwestern Cook County.
- Upgrading of existing commuter rail service by either adding cars onto existing trains, adding trains and modifying schedules, or adding parking capacity to commuter rail parking lots. These initiatives would be based upon ridership demand.
- Implementation of the EJ&E Circumferential Route. This project should be seriously considered by Metra. If found to be viable, the EJ&E Circumferential Route would be helpful to the region especially in connecting the employment centers in northwest Cook County and southern Lake County to the FAP Route 340 corridor.